

OVERVIEW

This report, which is required by the S.C. Solid Waste Policy and Management Act of 1991 (Act), provides an overview of the amount of municipal solid waste (MSW) recycled and disposed of in South Carolina for fiscal year (FY) 2004.

The Act established a comprehensive approach to managing solid waste. The Act, for example, set recycling and waste disposal (reduction) goals, required the development of a state solid waste plan as well as county plans, and provided advanced disposal fees on a number of items to fund all of the S.C. Department of Health and Environmental Control's (DHEC) solid waste programs – including all grant programs.

The Act also created DHEC's Office of Solid Waste Reduction and Recycling (Office) to provide technical assistance, education and outreach programs and grant funding to local governments, schools as well as colleges and universities.

Grant programs include solid waste, used motor oil, waste tire, college and university as well as school mini-grants. Since the grant program began in FY94, nearly \$40 million have been awarded including about \$1.5 million in FY04.

In addition, the Act also created the Recycling Market Development Advisory Council (RMDAC). DHEC funds the staff and activities of RMDAC. The mission of RMDAC is to assist in the development of markets in

South Carolina for recovered materials and products with recycled content.

The Act also required county governments to report annually to DHEC the amount of MSW recycled within their county. Permitted solid waste facilities also are required to report the amount of waste disposed of at their facilities annually to DHEC.

The Act originally set a state recycling goal of 25 percent and a goal of reducing by 30 percent the amount of solid waste disposed of at MSW landfills and incinerators. Both rates were calculated by weight. Both were measured from the **total** amount of waste generated. Both were measured from a baseline of FY93 and were to be met by FY97. Both goals were met in FY96.

The Act was amended in October 2000 to reflect new state recycling and waste disposal (reduction) goals. The recycling goal was changed to 35 percent of the total MSW stream. The waste disposal (reduction) goal was changed to 3.5 pounds of MSW per person per day. Both of these goals are to be met by June 30, 2005.

The amendment also redefined what could be counted as MSW by adopting the U.S. Environmental Protection Agency's (U.S. EPA) definition with one exception – tire derived fuel. South Carolina includes that commodity when calculating its recycling rate while the U.S. EPA does not.



WHAT IS THE DEFINITION OF MSW?

MSW has numerous definitions – which result in making it difficult, if not impossible, to compare recycling rates and disposal numbers between states.

South Carolina adopted the U.S. EPA definition in 2000 with the hope that other states would follow suit and comparisons could be made.

To date, South Carolina is unaware of any other state using the U.S. EPA definition. Given that, South Carolina has one of the most stringent definitions of MSW. For example, some states include construction and demolition debris as well as industrial waste when measuring their recycling

effort – thereby increasing their overall recycling rate. South Carolina does not.

South Carolina's definition of MSW is the combined residential, commercial, institutional/non-profit and industrial packaging/administrative waste generated. This includes paper, cans, bottles, food scraps, yard trimmings, packaging and other items.

It does not include industrial pre-consumer process waste like scraps and by-products from the manufacturing process, construction and demolition debris, auto bodies, agricultural waste, mining waste and sewage sludge as well as hazardous, infectious and radioactive waste.

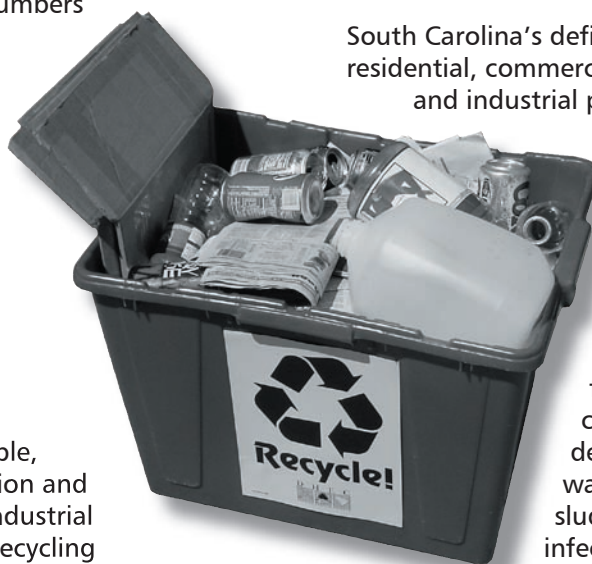


CHART 2.1: Sources & Examples of MSW

SOURCES OF MSW	TYPICAL EXAMPLES OF MSW
Residential (single- and multi-family homes)	Newspaper, clothing, packaging, cans and bottles, food scraps and yard trimmings
Commercial (office buildings, retail and wholesale establishments and restaurants)	Old corrugated containers (OCC), office paper, yard trimmings and cafeteria waste (food scraps, disposable tableware, paper napkins, cans and bottles)
Institutional (schools, libraries, hospitals and prisons)	Office paper, books, yard trimmings and cafeteria waste (food scraps, disposable tableware, paper napkins, cans and bottles)
Industrial (packaging and administrative, but not process waste)	OCC, plastic film, wood pallets, office paper, and cafeteria wastes (food scraps, disposable tableware, paper napkins, cans and bottles)

Definitions

PRE-CONSUMER WASTE: refers to materials generated in manufacturing processes such as manufacturing scrap and trimmings/cuttings. Also includes print over-runs, over issue publications (newspapers and magazines) and obsolete inventories.

POST-CONSUMER WASTE: refers to recovered materials that have been used as a consumer item (for example aluminum cans, plastic bottles, old newspapers and yard trimmings) and are diverted from municipal solid waste for the purpose of collection, recycling and disposal.

SOURCE: U.S. EPA, Measuring Recycling: A Guide for State and Local Governments (EPA530-R-97-011)

HOW MUCH **MSW WAS GENERATED?**

More than 4.3 million tons of MSW was generated in South Carolina in FY04 – a 9 percent decrease from the previous FY. Of that amount:

- 965,916 tons, or 22.4 percent, was recycled. By comparison in FY03, 1.3 million tons or about 28 percent was recycled.
- 227,802 tons, or 5.3 percent, was disposed of at a waste-to-energy facility (incinerator) in Charleston County; and
- 3,111,627 tons, or 72.3 percent, was disposed of at MSW landfills.

The FY04 recycling rate is down six percentage points from the year before and nearly 13 percentage points below the state's goal.

This rate also can be converted to pounds per person per day (p/p/d). In other words, South Carolinians recycled 1.3 p/p/d, which is the same as the national average according to the latest figures provided by U.S. EPA.

The amount of MSW disposed of increased slightly from 4.35 p/p/d in FY03 to 4.4 p/p/d in FY04. This rate has changed little in the past five years and remains above the state's waste disposal (reduction) goal of 3.5 p/p/d.

There is no question that South Carolina's MSW recycling rate has fallen. Why the decrease?

There are several factors contributing to the drop in the state's MSW recycling rate. They include: more accurate reporting by county governments combined with over reporting in earlier reports; an improved review of the county progress reports by DHEC; under reporting of recycling activities by businesses, schools and others; and a lack of participation by residents in local recycling programs. But clearly, the primary reasons for the drop in the recycling rate is more accurate reporting from counties combined with a more thorough review by DHEC of the annual county progress reports.

Consider that counties initially reported more materials recycled in FY04 than the previous FY. In fact, counties reported recycling 1.8 million tons of

materials in FY04 – up more than 500,000 tons from FY03.

But based on DHEC's extensive review, more than **900,000 tons** of materials that were recycled were determined not to be MSW (or not generated in South Carolina) and therefore could not count towards the state's measured recycling rate. That is not to suggest that the materials were not recycled – only that they could not be counted towards the MSW recycling rate. **If the 900,000-plus tons had been counted, the state's recycling rate would have been 36 percent – and South Carolina would have met its recycling goal one year before the deadline.**

It appears that previous reports perhaps over reported MSW recycling. Again, this is not to suggest that the materials reported were not recycled, but they should not have been counted as part of the MSW recycling rate.

It is also important to note the recycling rate for the total amount of solid waste – not just MSW. **More than 5 million tons or about 41.5 percent of the total solid waste generated was recycled in FY04.** That figure clearly indicates the depth of recycling in South Carolina.

When the Act was amended in October 2000 to change the definition of how South Carolina measures its recycling rate, workshops were held with recycling coordinators to review what could and could not be included in their annual progress reports as MSW recycling efforts.

Five years later, there have been many staff changes within the counties as well as more DHEC staff working solely on the report. As a result, seven statewide meetings were held in FY04 with 32 recycling coordinators attending. These meetings went over, in detail, the types of recycling activities that can be measured as MSW. As a result, many materials that would have been reported as MSW recycling were not reported. When the DHEC review of the county progress reports was completed, there was an overall drop in the tonnages reported because much of what had been reported belonged in industrial processed waste or construction and demolition debris categories.

Under reporting of recycling activities remains a significant issue. First, there are several counties that only report their recycling activities but do not include commercial businesses, schools, colleges and universities as well as some industry. Occasionally, counties did not collect or report recycling activities of municipal and federal programs located in their county. State agencies accounted for about 6,800 tons of MSW recycled in FY04. But that total was not applied to the MSW recycling rate because of the difficulty of fairly attributing tonnages to specific counties (state agencies have hundreds of buildings throughout the state). See page 23 for more information.

Second, while residential efforts represent roughly one-third of the state's MSW recycling totals, county governments are the only group required to report. In contrast, business, industry and most schools are not required to report and therefore the number reporting tends to fluctuate from year to year. Most businesses do not report for a variety of reasons including the information being proprietary, not realizing that recycling tonnages are being collected and the fact that some counties are unwilling or unable to get from local businesses those tonnages that were recycled. In other words, whether a county

doesn't seek information or industry and business feel their numbers should be kept confidential, the numbers are not obtained and therefore not included in the recycling rate.

For example, most waste tires generated in South Carolina are sent to recycling companies by retailers that sell tires. The Office estimates that nearly 50 percent of the tires recycled in the state are not included in the county progress reports submitted to DHEC. If these tires had been included, an additional 27,000 tons could have been added to the state's FY04 MSW recycling tonnages. Doing so would have increased the state's recycling rate.

Participation – or lack thereof by residents – appears to be another significant issue. **The state has a solid recycling infrastructure in place with 146 municipal curbside recycling programs, three counties that offer countywide curbside recycling programs as well as 606 drop-off recycling centers.** But it appears apathy has settled on the public and recycling is not considered as important as it was in the early to mid-1990s. Still, considering all factors, this is probably the most accurate snapshot to date of the state's recycling and waste disposal efforts.

LEGISLATIVE SUMMARY

At the Federal level, there were amendments to the Resource Conservation and Recovery Act regarding MSW landfills and the Used Oil Standards.

Part 258 is the criteria for MSW landfills. Section 258.4 was added to Subpart A allowing the director of an approved state to issue research, development and demonstration permits for MSW landfills. Owners or operators proposing to use innovative and new methods may request a variance to the run-on control system, the liquids restriction and the final cover criteria listed in Part 258. Permits issued under this section shall not exceed three years and renewals may not exceed three years. The total term of the permit shall not exceed 12 years.

Part 279 was amended to address dilution of used motor oil containing polychlorinated biphenyls (PCBs). If the concentration of PCBs is below 50 parts per million (ppm) because of dilution, the used motor

oil is regulated under 40 CFR Part 761 as a used motor oil containing PCBs at 50 ppm or greater. Part 279 also was amended to improve the tracking of on-specification used motor oil shipments.

During the 2004 Legislative Session of the S.C. General Assembly, there were no amendments to the Act or any of DHEC's regulations governing solid waste.

Only one local government reported making changes to their solid waste ordinance while 19 counties reported having an ordinance in place. These ordinances address such issues as litter control, fee changes, budgets, usage fees and transfer station access.

In addition, there were no revisions to the S.C. Solid Waste Management Plan in FY04. But county governments continue to update their plans.

RECOMMENDATIONS

1. Increased participation is needed to meet the state's MSW recycling goal.

In a 2001 survey, the Office found that only one out of five South Carolinians described themselves (or their households) as heavy recyclers and 60 percent said they were light to moderate recyclers. Several years later, the lack of and/or under participation by residents in local recycling programs continues to be an issue.

EDUCATION: DHEC recommends that a new commitment be made to education in an effort to increase participation in recycling programs. New efforts should be made to reach all residents including non-recyclers. Educational materials should be provided in other languages. Incentives, if possible, should be considered. Non-traditional settings should be targeted including multi-family dwellings.

STAFFING: For local governments, this commitment means making recycling a higher priority. One way this can be achieved is by dedicating personnel solely to recycling efforts. In addition to recycling coordinators (required by law), recycling educator positions should be considered. By doing so, local educational efforts can be expanded – leading to increased participation.

FUNDING: Efforts should continue to secure adequate funding for local recycling programs – especially for traditional recyclables such as paper, plastics, metals and glass. Strategies for obtaining alternative funding sources to augment funding available from the Office's grant program should be developed by the state as well as local governments.

RESEARCH: DHEC recommends conducting research, assessing obstacles that hinder participation in recycling programs – away from home or at work. The use of single-serve beverage containers away from home presents a recycling dilemma. Research is needed to review current collection programs and make recommendations to increase recovery. The extent of business recycling also needs to be evaluated including who is recycling, what they are recycling and the amount. This evaluation also should include businesses that are not currently recycling to identify barriers. Other research also

should be conducted by local governments, trade associations and the recycling industry.

2. Policy changes are needed to meet the state's MSW recycling goal.

Increased participation can only go so far towards meeting the state's MSW recycling goal. Policy and legislative initiatives also should be explored to increase recycling efforts.

PAY-AS-YOU THROW: DHEC recommends local governments adopt the pay-as-you-throw concept – a fee-based solid waste management option – that encourages increased recycling and reduced disposal. In other words, residents pay less for solid waste services if they recycle more.

BANS: DHEC endorses the establishment of statewide and local disposal bans. Specific items like cardboard and glass beverage containers could be banned to improve the state's MSW recycling rate. Both materials are available in high volumes and have stable markets.

ELECTRONICS: DHEC supports RMDAC's efforts to establish the Electronic Equipment Recycling Program. The ever-increasing volume of discarded electronic equipment necessitates a comprehensive management plan. Local governments are encouraged to support RMDAC's efforts.

3. Market development efforts are needed to meet the state's MSW recycling goal.

To improve recycling, local governments need to increase the amount and variety of recyclables collected. This requires many efforts – including market growth.

MARKETS: RMDAC should continue to foster communication between end markets and those – including local governments and businesses – collecting recyclables. RMDAC also should raise awareness of market specifications.

BUY RECYCLED: Efforts should be made to promote the purchase of recycled content products in order to drive the demand for recyclable items from markets. RMDAC should take a lead role by compiling a list of manufacturers of recycled content products.

